



Patent Docket
7242-103/10209858

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Mecherle et al.

Serial No.: 09/434,913

Filed: November 5, 1999

For: PORTABLE LASER TRANSCEIVER

Group Art Unit: 2633

Examiner: Bello, Agustin

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APPLICANTS' REPLY BRIEF

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

REAL PARTY IN INTEREST

An accurate statement of the real party in interest is included with Applicants' opening brief.

RELATED APPEALS

An accurate statement of related appeals is included with Applicants' opening brief.

STATUS OF CLAIMS

An accurate statement of the status of the claims is included with Applicants' opening brief.

STATUS OF AMENDMENTS

An accurate statement of the status of amendments is included with Applicants' opening brief.

SUMMARY OF INVENTION

An undisputed statement of the summary of the invention is included with Applicants' opening brief.

ISSUES

An undisputed statement of the issues is included with Applicants' opening brief.

GROUPING OF THE CLAIMS

The grouping of the claims remains as stated in Applicants' opening brief.

ARGUMENT

I. THE EXAMINER HAS FAILED TO ESTABLISH A *PRIMA FACIE* CASE OF OBVIOUSNESS TO SUPPORT THE REJECTION

The Examiner's characterization of the invention, when combined with the industry standard definition provided in the Examiner's Answering Brief, establish that a *prima facie* case of obviousness, based upon the teachings of the Mearns reference, has not been made as to the claims under appeal. Applicants and the Examiner agree on two important points. First, both agree that the Summary of Invention in Applicants' opening brief is correct. (Examiner's Answer, p. 2). Second, both agree that the Mearns reference teaches an optical system which includes a planar Mangin mirror. However, the parties dispute whether claim 21 is rendered obvious by Figs. 1 and 2 of Mearns in view of the knowledge of one skilled in the art.

A. The Examiner Has Mischaracterized The Teachings Of Mearns

According to the Examiner, light enters the optical system of Fig. 1 and the light rays comprising an intermediate image (10) reflect off the planar Mangin mirror (E) and converge to form an image at the focal plane (12) which is made of convergence points. The Examiner asserts that the convergence at the focal plane (12) is at "the focal point of the Mangin mirror". This assertion, however, is contrary to the definition of "focal point" provided by the Examiner nor the Examiner's statement about the location of the focal point of a planar mirror.

The Examiner cites two different sources for definitions of "focal point". The first source is Merriam Webster's Collegiate Dictionary, which provides definitions that are directed towards persons of little or no skill in the art of optical communications. The second source is the Communications Standard Dictionary, which provides more accurate definitions of terms as understood by those skilled in the art.

Both sources define the term "focal point" as the point at which rays of light converge or diverge to form an image of an object. (Examiner's Answer, pp. 5-6.) While this definition is technically accurate, it is incomplete for purposes of evaluating whether the prior art of record renders claim 21 obvious. The incompleteness arises because claim 21 includes a limitation on the term "focal point", which is recited as "the focal point of the Mangin mirror". Thus, the definition of the term focal point cannot be viewed without an understanding of how a mirror defines a focal point.

Both sources also define the term "focal point" as it is understood in relation to a mirror or lens. The Communications Standard Dictionary, however, gives a more complete definition, providing that the term "focal point" is synonymous with the term "principal focus point". (Examiner's Answer, p. 6.) These terms are defined as "the point to which incident parallel rays of light converge, or from which they diverge, when they have been acted upon by a lens or mirror." Applicants do not dispute that the Communications Standard Dictionary definition is appropriate to establish how one skilled in the art of optical communications would interpret the term "focal point" within the context of claim 21. From this definition, it is clear that incident parallel rays are the standard by which the location of a focal point, as that term relates to a lens, mirror, or optical system, is determined. Further, it is this definition which leads the Examiner's to the statement that "the focal point of a planar mirror, when parallel light beams are incident upon it, lies at infinity." (Examiner's Answer, p. 7.)

A comparison of the Examiner's statements regarding focal points reveals the principal problem with the rejection. On the one hand, in reference to the optical system

of Fig. 1 in Mearns, the Examiner asserts that the focal point of the planar Mangin mirror (E) lies within the focal plane (12), which is a known, discrete distance from the Mangin mirror. (Examiner's Answer, pp. 5-6.) On the other hand, the Examiner states that the focal point of planar mirrors in general lies at infinity. However, the focal point of the planar Mangin mirror taught by Mearns cannot possibly lie at both a position that is a finite distance from the mirror and at a position located at "infinity."

The answer to this apparent paradox is self-evident from the definitions provided by the Examiner: Mearns teaches a focal point lying within the focal plane (12), but this focal point is not "the focal point of the Mangin mirror". Rather, it is *the focal point of the optical system as a whole*. The focal point of the planar Mangin mirror, when considered in the absence of all other optical elements depicted in Fig. 1 of Mearns, remains at infinity.

B. The Prior Art Of Record Does Not Teach All Claim Limitations

In view of the above, the teaching of Mearns in combination with the knowledge of one skilled in the art does not teach or disclose all limitations of claim 21. Claim 21 includes the limitation that "a photodiode at the focal point of the Mangin mirror". As indicated in the accepted summary of invention, the "focal point" recited is the focal point of the Mangin mirror; it is not the focal point of an optical system which includes the Mangin mirror. The Examiner does not dispute this reading of the limitations of claim 21. (Examiner's Answer, p. 2.)

Based on this interpretation, claim 21 is not rendered obvious by the teachings of Means. Accepting as true the Examiner's statement that "the focal point of a planar mirror, when parallel light beams are incident upon it, lies at infinity", Mearns does not teach how to place a photodiode at infinity relative to the planar Mangin mirror disclosed in Figs. 1 and 2. Moreover, Applicants are unaware of any other prior art of record which teaches how to position a photodiode at "infinity."

CONCLUSION

A *prima facie* case of obviousness is not supported by the Mearns reference, whether standing alone or in view of any other prior art of record. The rejection of the claims currently on appeal should therefore be reversed.

Respectfully submitted,

FULBRIGHT & JAWORSKI L.L.P.

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